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BEFORE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
HOUSE OF REPRESENTATIVES
ON H.R. 10115

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Mr. Chairman and Members of the Committee:

Thank you for the opportunity to appear before this Committee on H.R. 10115, the legislative proposal recommended by the President to provide for the establishment, ownership, operation, and regulation of a commercial communications satellite system.

The research and development programs carried out by the National Aeronautics and Space Administration have now reached a point of development from which it is possible to plan for an early operational capability for satellite "space stations" that can add a tremendous additional resource to meet the increasing needs for world-wide communications facilities. Legislation is now needed to provide a policy and operational framework within which we may build on our research and development efforts, and it is my purpose here today to recommend the early enactment of H.R. 10115.

Just as it has led the world in research and development in this field, the United States now has the further

challenging opportunity to provide leadership in developing an operational pattern through which this dramatic new means of communications can prove to be not only technically feasible but a practical and economic reality. However, if we are to meet and fulfill this opportunity, we must provide without delay for the organization and the financing which are essential in order that the planning for the system can go forward at a rapid pace. Although spectacular accomplishments in space do dramatize a nation's capability in science and technology, the demonstration of our purpose and ability to use our new space tools to accomplish tasks of practical benefit, such as providing a more efficient means of increasing our present communications work-load capacity, will give an image of a nation at work in space that will, perhaps, be as important in eliciting international cooperation as any but the most spectacular events.

Today, the United States needs to place the strongest emphasis on the necessity for getting a driving effort going within and among the communications companies with the know-how to solve the technical problems involved in bringing an operating system into being, and on providing the strongest

incentives to establish a commercial communications satellite system at the earliest practicable time. H.R. 10115 provides the organizational framework for this effort, and, in keeping with our system of free enterprise, places it under private ownership.

The functions and responsibilities NASA will have in connection with the operation of the communications satellite system and the Corporation which would be created under H.R. 10115 are set forth principally in Section 201(b) beginning on page 8 of the bill.

If H.R. 10115 is enacted, NASA will not have regulatory or supervisory powers over the Corporation. Under Section 201(b) NASA will have, however, the responsibility to advise the Federal Communications Commission on the technical characteristics of the system. The term "technical characteristics" includes such factors as the number of available channels in the satellite system, its transmission quality, the capability for multiple access, the percentage of available time for reliable communication between designated points, the capability to expand services at a future date, and so on. The responsibility to advise the FCC on these things is a corollary of NASA's

responsibility to consult with the Corporation on the technical characteristics of the system which is provided for under Section 201(b)(4) of the bill. It will be essential, we believe, for NASA and the Corporation to establish a close and continuous relationship for the purpose of determining the design and technical characteristics of the initial system, as well as of subsequent modifications and improvements. There should be a constant cross-feeding of engineering and scientific information, R&D results, test results, and data on the actual operation of the system. The technical characteristics of the system may also be affected by work done by NASA in fields other than satellite communications -- for example, the development of improved antennas and receivers for Deep Space Communications may indicate the adaptability of new techniques for the communications satellites.

It will also be essential for NASA to keep the FCC fully and regularly informed on the technical characteristics of the system, as they evolve and change, so that the FCC can carry out its responsibilities for approving

the operational system, planning for the allocation of the facilities of the system among users, and similar matters. Conversely, the FCC may ask NASA to work on changing the characteristics of the system in order to improve compatibility with existing communications systems, to provide more efficient or economical service, and so on.

In connection with this NASA responsibility, I might note that the basis for the coordination of the activities of NASA and the FCC in space telecommunications was established in a Memorandum of Understanding between us, dated February 27, 1961. Both before and since that date, NASA and the FCC have worked closely and, I think, effectively on the many matters of common interest to us in the field of space communications. We would expect that this coordinated effort will continue.

NASA's second responsibility under the bill will be to coordinate its research and development program with that of the Corporation. This again is a corollary of our responsibility to consult with the Corporation on the technical characteristics of the system. In the course of such consultation, we believe it can be expected that

NASA and the Corporation will agree on how they might complement the R&D programs of each other, in order to expedite the development of an operating system. In addition, after this initial communications satellite system has been developed and is in operation, NASA and the Corporation should continue to coordinate their R&D projects directed at developing new and advanced techniques in space communications, which might eventually be incorporated into the system. I would stress in this connection that the research and development necessary for the immediate improvement of the system so as to make it more efficient and economical, as contrasted with long-range improvement through the development of advanced techniques, will be the responsibility primarily of the Corporation. However, NASA might also assist the Corporation in R&D projects with these aims, subject to reimbursement of NASA's costs by the Corporation. Further, NASA would continue to consult with the Corporation on the effect such improvements might have on the technical characteristics of the system.

NASA's third function in relation to the activities of the Corporation will be to furnish satellite launching

and associated services, including launch vehicles, in connection with the development and operation of the system. We will have two separate responsibilities in this respect, which are prescribed by Sections 201(b)(3) and (b)(5) of H.R. 10115: First, to furnish vehicles and launching and tracking services during the development phase of the system, and second, to furnish them for the operational system. The only distinction between these responsibilities would be that during the development phase NASA would be required to furnish only such vehicles and services as it considered necessary to the expeditious and economical development of the system. This limitation is, of course, a practical necessity. The demand on launching vehicles and launch facilities available to NASA is very great, and we must be able to balance the requirements of the space communications program against those of other programs which are of equal importance in NASA's overall scientific effort. It would not be desirable, therefore, to require NASA to furnish launch vehicles and facilities for a satellite which, in the judgment of NASA's own scientists and technicians, would not contribute to the expeditious and economical development of the operating

system. However, in connection with the operational system, it will be mandatory on NASA to furnish all the launching and associated services required for the establishment, operation or maintenance of the approved system, and we would expect to fulfill this responsibility.

NASA's final responsibility, and this is more in terms of an authorization, will be to furnish other services to the Corporation, on a reimbursable basis, and to the extent we are capable of doing so. What is contemplated in this regard is that the Corporation may request NASA's assistance for services other than launching and tracking, such as environmental testing of components, for example, or data analysis, when it does not have the facilities to perform them itself. To the extent feasible, NASA would furnish such services to the Corporation, on a reimbursable basis.

NASA would have only one other function under H.R. 10115. Under Section 201(c)(3), we would advise the Secretary of State as to the technical feasibility of furnishing communications services by means of the satellite system to a particular foreign point, before the

Secretary requested the FCC to consider whether a carrier should be required to furnish such services. This function is, of course, entirely consistent with NASA's responsibility to advise the FCC on the technical characteristics of the system.

Quite aside from the specific responsibilities NASA would assume under H.R. 10115, I should like now to comment on the significance of the President's proposals. The bringing into being of a world-wide communications satellite network should, it seems to me, be considered in the light of recent developments growing out of World War II, when we developed the capability for large-scale organized effort in science and technology. Since the end of the war, we have gone through a great national debate as to the peacetime application of the war and post-war lessons derived from the work of scientific and technological teams in atomic energy, in radar, in rocketry, and in many areas involving new metals, materials, and techniques. We have learned that these developments have revolutionized the conceptual framework against which we must judge what is possible and what is impossible.

In aviation, it took this nation forty-five years to move from the first flight of the Wright Brothers to the modern, readily available jet air service which we know today. It has taken but four years from the flight of the first man-made satellite to the point where we are actively considering, as a nation, participating with other nations in three major innovations of vast potential which involve the establishment of world-wide services. I refer, of course, (1) to the use of the meteorological satellite to vastly expand our world-wide reporting of weather phenomena, (2) the world-wide communications satellite operational system envisaged by H.R. 10115, and (3) the possibility of expanding the use of navigational satellites into a world-wide system available to ships and planes that travel the conventional oceans of water and air and, indeed, to extend it to those new vehicles, spacecraft, which are required to sail the oceans of space.

The decisions made by the United States since World War II which are embodied in the Atomic Energy Act of 1946, in the National Science Foundation Act of 1950, in the National Aeronautics and Space Act of 1958, and in the

Arms Control and Disarmament Act of 1961 comprise a pattern through which this nation is moving on, step by step, to work with other nations, using the tools and capabilities of science and technology for the benefit of all mankind. Any view of the President's proposals in H.R. 10115 that does not recognize them as a part of this continuing pattern has not caught the vision toward which the President reaches.

Before closing, I should like to speak briefly about the aspect of this legislation which has probably caused the greatest amount of discussion to date -- namely, the question of ownership and control of the new Corporation to be created. I can assure the Committee that when H.R. 10115 was being formulated within the Executive Branch, this question was given the most extensive and careful consideration. The decision was made by the President that a Corporation in which investment is open to wide participation would more readily attract the large amounts of capital required for the rapid development and establishment of the satellite communications system, and would be able to function

effectively and efficiently in operating the system. He also felt that this would best serve the broad public interest by avoiding the placing of control of the system in a small group of companies, with the possibility of domination by one of these.

The Committee, I know, is familiar with the arguments which have been made concerning the practical advantages which might result from limiting ownership of stock in the Corporation to communications common carriers. The arguments have merit; but I suggest that the decision on the base of ownership involves broader issues of public policy than may be apparent from these arguments. To realize the full potential of a system of communications satellites will require the utmost in advanced research and new operational concepts. Strong incentives to create these conditions are needed. However, the marrying of the know-how of industry with the requirements of a forward-looking Governmental policy requires something more from our investment in space than commercial utilization. It requires also that the instruments through which this marriage is made effective look to reinforcing and strengthening the

total pattern of our relations with other peoples. Increasingly, these peoples look to us for leadership in bringing the practical benefits of science and technology to them as well as to ourselves. The President, in viewing our total opportunities and responsibilities in space, has a strong feeling that a new, widely held private Corporation, free from domination by any one element, can best work with the Government agencies and industries involved to realize our opportunities and discharge our responsibilities. As the President stated in recommending this legislation, the communications satellite system will be by its very nature a Government-created monopoly, and it would not be in the public interest to limit ownership and control of the satellite Corporation to a few existing companies.

The enactment of legislation to carry out the President's recommendations in this area of satellite communications is a matter of extreme importance and urgency. Our country has a great opportunity -- and a great stake -- in being the first to establish a commercial communications satellite system to serve the communications needs of the

entire world. By achieving this, we will demonstrate again to the world not only our technical capabilities, but that the activities of the United States in space are, as the Congress declared in the National Aeronautics and Space Act they should be, truly devoted to peaceful purposes, for the benefit of all mankind.

The strongest impetus which can be given to the task of developing a system which is technically feasible as quickly as possible will be by creating the organization for getting the job done. The President's recommendations provide a sound and comprehensive plan for such an organization, and I would urge the Committee to take prompt and favorable action on them.

Thank you for the opportunity to present these views.